

New injectables: technology meets biologic development

SHL Group's innovative technologies support highly viscous biologic formulations that are being developed to reduce the number of injections needed for patients. The company is a pioneer in injectables that use leading technology to increase safety and connectivity.

Since recombinant DNA technology was commercialised over 30 years ago, the use of biological drugs that treat chronic conditions has risen. Research has shown that when developing biologic formulations, developers look at the route of administration as a means to address patient needs and create market differentiation. As a result, pharmaceutical companies are developing combination products that serve to benefit patients by using formulations that require less administration.

With safety, ease of use and the possibility of home treatment, self-administered auto-injectors remain the preferred method of drug delivery in treating chronic diseases. However, developers often face challenges with high viscosity when formulating large-biologic molecules in high concentrations, which may also lead to higher volumes. Traditional injectable systems for self-administration face the challenge of delivering highly viscous formulations without compromising patient comfort and device usability.

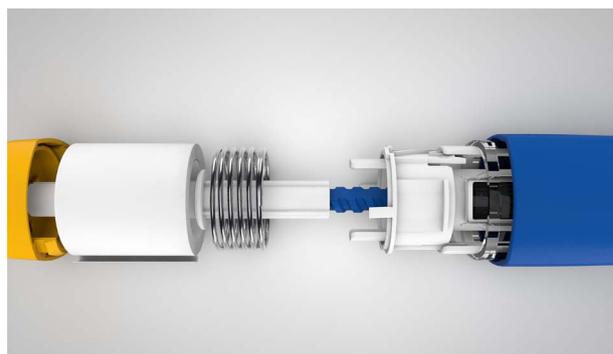
Higher volumes and fewer hospital visits

Using a clock spring to provide constant high force, SHL Group's patented Rotaject technology can deliver formulations with viscosities of up to several hundred centipoise in a safe and timely manner. The technology, which was commercialised in 2009, can be used with a two-step auto-injector and a 1.00ml or 2.25ml syringe to support larger volumes. With this market-proven technology, pharmaceutical companies can save time and costs reformulating their drugs. This also allows companies to bring products to market in a timely manner.

For patients, less frequent injections result in fewer costly visits to the hospital, and more time saved from time-consuming infusions and a better quality of life; however, adherence is a challenge that needs to be addressed as the duration between injections increases.

Connected to the future of injectables

Connectivity is enabled when electronics and firmware are added to a device, and can help solve this problem by using wireless technology, where a connected auto-injector communicates with a mobile device and/or a cloud-based system to track and record crucial information, including injection time, date, drug and dose. The collected data can help patients to remember when to administer their injections,



Rotaject technology delivers high-volume and high-viscosity biologics without compromising the patient's comfort.

ensure that the injections are conducted correctly and provide support in improving the outcome of a treatment.

To demonstrate the opportunities opened up by connectivity, SHL introduced the Alubena programme for connected devices. This uses a recording unit that can be integrated with an injection device in different ways, providing the patient with enhanced training and feedback to conquer their fear and increase their confidence when administering the injection.

A connected system benefits not only the patient, but also offers future opportunities for other stakeholders as well. Doctors, for example, already recognise the value of such data because the information can help them assess, evaluate and modify the therapy. For pharmaceutical companies, connected products can create brand differentiation and improve drug life-cycle management. Meanwhile, the availability of real-world data gives payers the opportunity to evaluate how effective treatment outcomes truly are.

SHL understands that drug delivery devices must, first and foremost, serve the interest of the patient. By combining vision and decades of experience in designing, developing and manufacturing injection devices, SHL is able to leverage unique industry insights with patient-centric solutions for next-generation biologic formulations. ■

References available upon request.

Further information

SHL Group
www.shl.group

